

REMARKS

Claims 2-3, 6-7, 19-20, 23-24, 26, and 28 are cancelled without prejudice. Claim 1 is amended to include limitations from cancelled Claim 2; Claim 18 is amended to include limitations from cancelled claim 19 and to correct a typographical error; and Claims 4, 5, 21, 22 and 30 are amended to correct dependency on cancelled claims and/or to include limitations directed to a current sink. Claims 1, 4-5, 8-18, 21-22, 25, 27, and 29-30 remain for consideration and are thought to be allowable over the cited art.

The rejection of claim 18 under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention is respectfully traversed. The rejection is thought to be improper because the claim as submitted is thought to be reasonably clear to those skilled in the art. However, claim 18 is amended to correct the typographical error. The amendment is not thought to be necessary for patentability because those skilled in the art would have recognized the typographical error.

The rejection of claims 1, 3-8, 11, 14, 17-18, 20-25, 27-28, and 30 under 35 USC §102(b) as being anticipated by "Khoury" (U.S. Patent No. 65,532,637 to Khoury et al.) is respectfully traversed because the Office Action fails to show that all the limitations are taught by Khoury. Claim 1 includes, for example, limitations of a current sink, coupled to the differential amplifier, the current sink drawing current from the differential amplifier to adjust current through the load. Independent claim 18 includes similar limitations. Independent Claims 27 and 30 also include limitations respectively directed to sinking current and a current sink. These limitations are not shown to be taught by Khoury. Khoury teaches one or more current sources that reduce distortion and noise by operating a differential pair of transistors at a higher current than two additional differential pairs of transistors [Abstract and Col. 2, lines 41-46]. Khoury does not suggest using a current sink.

Claims 4-5, 8, 11, 14, 17, 21-22, and 25 which depend from either Claim 1 or Claim 18, include limitations that further refine the claimed mixer. Therefore, these claims are not shown to be anticipated by Khoury. Claims 3, 6-7, 20, 23-24, and 28 are cancelled and their rejection is now moot.

The rejection of Claims 1, 3-8, 11, 14, 17-18, 20-25, 27-28, and 30 as being anticipated by Khoury should be withdrawn because Khoury is not shown to teach all the limitations of the claims.

The rejection of Claims 2, 9-10, 12-13, 15-16, 19, and 29 under 35 USC §103(a) over Khoury as applied to Claims 1, 3-8, 11, 14, 17-18, 20-25, 27-28, and 30 above, is respectfully traversed because the Office Action does not show that all the limitations are suggested by Khoury, does not to provide a proper motivation for modifying the teachings of Khoury, and does not show that the modification could be made with a reasonable likelihood of success.

Limitations of cancelled Claim 2 are included in amended Claim 1, and Claims 9-10, 12-13, and 15-16 include further limitations that refine the mixer as previously discussed in regards to Claim 1. Claim 19 is cancelled and the rejection is now moot.

The alleged motivations for modifying the teachings of Khoury are conclusions that are unsupported by evidence. Furthermore, the alleged modifications to Khoury are not suggested by Khoury's teachings.

The alleged modification to Khoury is improper because the modification would frustrate an objective of Khoury. Khoury's mixer is described as providing reduced distortion and noise [Abstract and Col. 2, lines 41-46]. However, if the alleged modification is made to Khoury, the distortion and noise would worsen. Khoury teaches that distortion is increased by decreasing the bias current in the lower pair of transistors and that noise is increased by increasing the bias current in the in the upper quad of transistors [Col. 1, lines 33-40]. Using a current source as taught by Khoury reduces distortion by providing an increase in the current I in the lower pair of transistors and reduces noise by providing a decreased current $I/1$ in the upper quad of transistors [Col. 4, lines 3-23]. In contrast, the alleged modification of using a current sink would both increase distortion and increase noise because the current in the lower pair of transistors would be decreased while the current in the upper quad of transistors would be increased. Thus, the proposed modification would frustrate a purpose of Khoury, and the alleged modification is improper.

Claim 29 is in means-plus-function format and includes limitations of means for sinking current from the means for amplifying to alter current through the means for

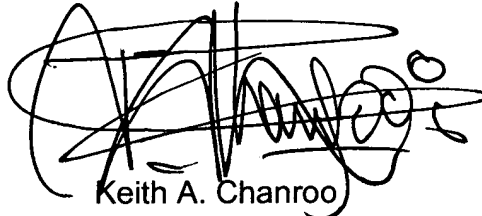
receiving the amplified input signal. As previously discussed, the function of sinking current is not shown to be suggested by Khoury. Therefore, Claim 29 is not shown to be suggested by Khoury.

The rejection of Claims 2, 9-10, 12-13, 15-16, 19, and 29 over Khoury should be withdrawn because the First Office Action fails to show all the limitations are suggested by Khoury, fails to provide a proper motivation for modifying Khoury, and fails to show that the combination could be made with a reasonable likelihood of success.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Amendments and Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on July 25, 2006.

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